

Remarks

The Applicants note with appreciation the withdrawal of the prior rejection based on the combination of Yoshiba and JP '019 with JP '527.

The Applicants have amended Claim 158 to recite that the phosphor paste 1) continuously flows downwardly from all of the holes at the same time and into all of the spaces to be coated between the barrier ribs during a one time relative movement between the paste applicator and the substrate and 2) is arranged in a pattern wherein adjacent spaces do not contain the same color. Support may be found in the Applicants' Specification on page 70 at lines 12-17.

Claim 159 has been amended to change "or" to "and." Claim 160 has been amended to recite that the phosphor paste contains a phosphor powder emitting light of at least one of red green or blue. Also, Claim 160 has been amended to recite that the means for moving the substrate in the paste applicator relative to each other is such that the phosphor paste is arranged in a pattern wherein adjacent spaces do not contain the same color. Support may be found at page 70, lines 12-17 as noted above with respect to Claim 158.

New Claim 165 has been added. It is the same as Claim 160 prior to the amendments, except that the text "red, green or blue" has been changed to "red, green and blue." Entry of Claim 165 into the official file and examination on the merits is respectfully requested.

Claim 158 stands rejected under 35 U.S.C. §112, second paragraph as being indefinite. The Applicants note with appreciation the Examiner's helpful comments with respect to the lack of clarity with respect to a single color or more than one color. The Applicants have removed the "for each color" language noted in the rejection. The Applicants respectfully submit that Claim 158 is now in compliance with §112. Withdrawal of the rejection is respectfully requested.

Claims 158-160 stand rejected over the combination of Yoshiba, Iguchi and Kanagu with JP '527. The Applicants note with appreciation the Examiner's detailed comments hypothetically combining the various references. The Applicants nonetheless respectfully submit that even if one skilled in the art were to make the hypothetical combination, the structure and methodology from that combination would still not result in what the Applicants claim. Detailed reasons are set forth below.

The basis of the rejection relies on JP '527 and refers to both a partial translation, which the Applicants did not receive, and Fig. 2. The Applicants enclose their own certified partial

translation and this response is based on the contents of that translation. In any event, the Applicants agree that JP '527 discloses that "multiple nozzles may simultaneously spray the three primary colors, or may be arranged so as to spray the same color with equivalent spacing." However, the Applicants respectfully submit that there is nothing of particular importance in that disclosure inasmuch as utilization of several nozzles spraying three primary colors or spraying the same colors is not new and the Applicants do not claim that.

The key point of the rejection is that:

Nanto reasonably teaches that the phosphor of one color can be applied to all the spaces to be coated with that color in a one time relative movement of the nozzle and the substrate (Figs. 2-3).

The Applicants respectfully submit that JP '527 does not provide any teachings with respect to one time relative movement of the nozzle in a way that will result in an operable plasma display. Reference to Fig. 2 of JP '527 readily shows this. The Applicants enclose an exploded view of the JP '527 paste applicator of Fig. 2. This exploded views show that there is no disclosure, no teaching and no suggestion of one time relative movement. In fact, the Applicants respectfully submit that JP '527 demonstrates just the opposite, namely the need for multiple passes.

There are two theoretical possible variations of the operation of the apparatus shown in Fig. 2 of JP '527 based on the explanation of the different color or same color discussion in the partial translation. The first variation involves the nozzles discharging all three colors. In that regard, the reference to the exploded figure shows that the structure associated with reference number 2 of Fig. 2 is a nozzle set which comprises three nozzles. In the multicolored scenario, one of the nozzles of nozzle set 2 is a red nozzle, another nozzle of the nozzle set 2 is a green nozzle and the third nozzle of the nozzle set 2 is a blue nozzle. Thus, nozzle set 2 is a three color red-green-blue nozzle set. There are four nozzle sets in paste applicator 1. Each nozzle set produces a red-green-blue pattern 9 as indicated in the figure.

However, there is a huge problem with that disclosure. That problem is the substantial space between the nozzle sets. It can be seen by a close examination of the exploded views that three passes would be needed to result in an operable plasma display. That is because of the large gap between the patterns 9. These gaps are labeled A, B, C and D in the exploded view of the paste applicator. It should be noted that each space A, B, C and D has a lateral width that is twice as large as the width of the pattern 9. (The width of pattern 9 is labeled "X" and the gap

between patterns 9 is "2X.") This allows for a single pass from one end of the substrate to the other, a small lateral movement of the paste applicator by the width of pattern 9, a second pass of paste applicator 2 which would deposit a second set of patterns 9. This would be followed by second lateral shift, which in turn would be followed by a third pass to complete an operative plasma display. Therefore, the Applicants respectfully submit that the apparatus of Fig. 2 of JP '527 in the multicolored variation positively teaches and requires a minimum of three passes to produce an operable plasma display. This is not what the Applicants claim. Instead, the Applicants claim just the opposite. The Applicants claim a single pass or a "one time relative movement." Thus, that JP '527 scenario is inapplicable.

The second variation is where all of the colors in the three nozzles of nozzle set 2 are the same. This variation is nonsensical. One skilled in the art would not pursue variation 2. The reason is quite simple. Each space is bound by a pair of adjacent ribs, all of which themselves occupy lateral space. In other words, the paste stripe occupies a space having a lateral width. That paste has confining ribs on both sides of the paste stripe. Each rib has a lateral width. Thus, each nozzle involves two ribs and three paste stripes of the same color which would then be separated from another set of three stripes and two ribs by an intervening rib.

That lateral space is critical with respect to plasma display resolution. That criticality with respect to the resolution would be in the direction opposite of that sought by those skilled in the art. In other words, those skilled in the art continuously seek to improve the resolution of the plasma display. Making each color larger in the transverse direction by having three stripe widths and two rib widths would seriously degrade the resolution of the resulting plasma display. Such a display having such poor resolution would be commercially not viable in any sense. This means that one skilled in the art would not pursue this theoretical disclosure of JP '527, thereby rendering it utterly nonsensical. Thus, variation 2 is also inapplicable.

This is sharply contrasted to Claims 158-160 which achieve high resolution in a single pass of all colors as set forth in Claim 159 and high resolution by applying at least one color in a single pass followed by at least another color in a single pass as recited in Claims 158 and 160. In that regard, Claims 158 and 160 require that the adjacent spaces do not contain the same color. This explicitly excludes the nonsensical variation 2 of JP '527. As a consequence, the Applicants respectfully submit that JP '527 is inapplicable to those three claims.

There is the further deficiency in JP '527 with respect to the number of outlet holes. Although the rejection turns to Kanagu for teachings about the number of outlet holes within the claimed range, hypothetically combining Kanagu with JP '527 would not solve the deficiencies set forth above with respect to JP '527.

Hypothetically combining Iguchi with JP '527 to cure the deficiency with respect to the failure of JP '527 to teach the gas discharge panel being a plasma display or that ejected phosphor contains a phosphor powder and an organic compound would still not cure the deficiencies set forth above with respect to JP '527. Thus, even if one skilled in the art were to hypothetically combine Iguchi and Kanagu with JP '527, the methodology and the structure brought about by that combination would still not result in what the Applicants recite in Claims 158-160.

JP '527 also does not teach the continuous flow of phosphor paste via continuous application of pressure. Hypothetically combining the teachings of Yoshiba with JP '527 would also not cure the deficiencies set forth above with respect to JP '527. Thus, further hypothetically combining Yoshiba with Iguchi and Kanagu would still not produce methodology or structure that is the same as what the Applicants claim in Claims 158-160.

Moreover, the Applicants respectfully submit that the rejection improperly strings together four separate references and randomly plucks isolated, unrelated disclosure from each of those four disclosures merely for the purpose of forming a rejection. Those skilled in the art do not do this. Instead, they look to relevant teachings in the prior art as applied to the problems that they are trying to solve and employ those relevant teachings to solve that problem. Such a selection of those bits and pieces from the four different publications does not represent reality with respect to how those skilled in the art view prior art. In any event, even if one skilled in the art were to randomly pick these selected pieces from the disclosures of the four publications, such a combination would still not result an apparatus or methodology that would be the same as what the Applicants have achieved. The fundamental problem is that JP '527 is deficient with respect to teaching one time relative movement of the nozzle and the substrate. JP '527 provides two possibilities, one of which is nonsensical and the other of which teaches in the wrong direction. When those skilled in the art do the opposite of what the prior art teaches, that activity

is excellent and compelling evidence of non-obviousness and patentability. Such is the case here. Withdrawal of the rejection is respectfully requested as it applies to Claims 158-160.

In light of the foregoing, the Applicants respectfully submit that the entire Application is now in condition for allowance, which is respectfully requested.

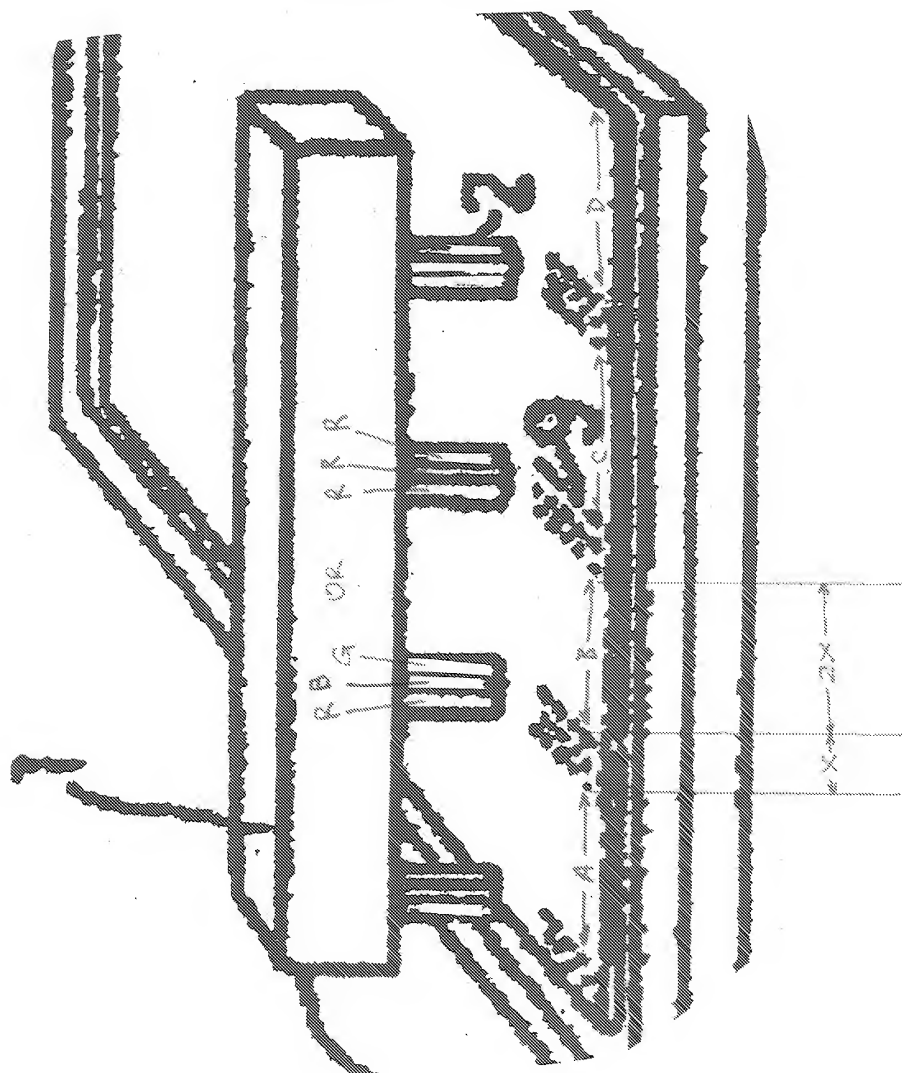
Respectfully submitted,



T. Daniel Christenbury
Reg. No. 31,750
Attorney for Applicants

TDC/vbm
(215)656-3381

Exploded view of Paste Applicator of Fig. 2
JP 63-155527 of Fig. 2



VERIFICATION OF TRANSLATION

Partial English translation of JP 63-155527 A published on June 28, 1988

I, Motohiko Nagashima of 2-1-417, Hakusan 1-chome, Asao-ku, Kawasaki-shi, Kanagawa 215-0014 Japan, am the translator of the document attached and I state that the following is a true translation to the best of my knowledge and belief of JP 63-155527 A.

DATED this 25th day of April, 2008

Signature of translator 
Motohiko Nagashima

From page 2, the lower right column, line 10 to page 3, the upper left column, line 4 of JP 63-155527 A:

An apparatus shown in Fig. 2 is a phosphor applying apparatus having an improvement in the principle figure, in which a plurality of nozzles each of which comprises the nozzle portion 1 is provided for raising working speed.

The plurality of nozzles may comprise three nozzles simultaneously spraying the three primary colors or nozzles for the same color arranged with an equivalent spacing.

As a moving system for the spraying head 1, the so-called servo system comprising means of light, etc. for detecting a target position and correcting a position of the spraying head can be used, or a system for regulating a digital displacement by an open loop with a pulse motor can be used. Further, scanning between the spraying head 1 and the cover substrate 6 is relative, and therefore, a carrier 8 may be scanned by a feed screw 11 and a catch screw 12 under control of a scanning portion 10, as shown in Fig. 2.